

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
20 January 2005 (20.01.2005)

PCT

(10) International Publication Number
WO 2005/006579 A1

(51) International Patent Classification: **H04B 1/18,**
H03H 7/38 // H01Q 1/24

(21) International Application Number:
PCT/SE2004/001123

(22) International Filing Date: 9 July 2004 (09.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0302054-2 11 July 2003 (11.07.2003) SE

(71) Applicant (for all designated States except US): AMC
CENTURION AB [SE/SE]; P.O.Box 500, S-184 25 Åk-
ersberga (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): KREBS, Chris-
ter [SE/SE]; Dalgången 11, S-184 63 Åkersberga (SE).

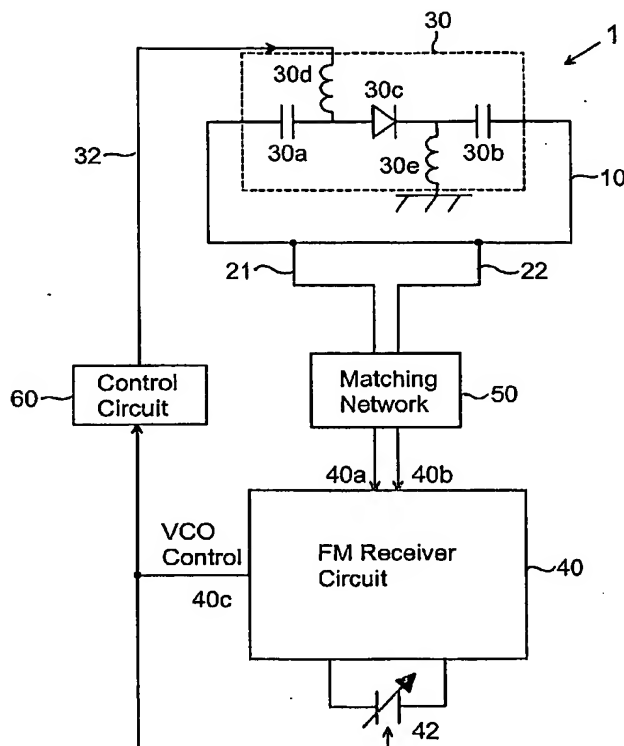
OLSSON, Magnus [SE/SE]; Riddarvägen 134, S-184
51 Österskär (SE). STARCK, Jonas [SE/SE]; Högmarsö
424, S-760 19 Furusund (SE). ISHIMIYA, Katsunori
[JP/SE]; Störängsvägen 6, S-184 30 Åkersberga (SE).
VON ARBIN, Axel [SE/SE]; Råsundavägen 39 A, S-169
67 Solna (SE).

(74) Agents: ESTREEN, Lars et al.; Kransell & Wennborg
AB, Box 27834, S-115 93 Stockholm (SE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

[Continued on next page]

(54) Title: ANTENNA DEVICE AND PORTABLE RADIO COMMUNICATION DEVICE COMPRISING SUCH ANTENNA
DEVICE



(57) Abstract: An antenna device for a portable ra-
dio communication device adapted for receiving radio
signals comprises an internal radiating element (10)
comprising at least one feeding portion (21, 22) con-
nected to a receiver circuit (40). The radiating ele-
ment (10) comprises an electrical impedance (30)
that is controllable in dependence on the desired fre-
quency range of the received signals, wherein the feed-
ing portion (21, 22) is connected to a feeding input (40a, 40b)
on the receiver circuit and the control input of the con-
trollable electrical impedance (30) is connected to an
output (40c) on the receiver circuit (40) intended for
the control of the VCO resonance frequency of the re-
ceiver circuit. In that way an antenna device can be
provided inside the casing of a small sized portable
radio communication device, which has good per-
formance throughout a narrow sub-band of a frequency
band having a relatively low frequency, wherein the
narrow sub-band can be adjusted in frequency so as to
cover the entire frequency band, such as the FM radio
band.



(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*